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GE GLOBAL RESEARCH

**Fax**

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|---|---|---|---|
| To: | Examiner Thangavelu | From: | David C. Goldman |
| | Group Art Unit 2123 | Docket No. | RD-27,376 |
| Fax: | 703-872-9306 | Pages including this sheet: | 23 |
| Phone: | 703-305-0043 | Date: | December 18, 2003 |

Re: US Patent Application Serial Number 09/578,095
• Comments:

Examiner Thangavelu,

Enclosed is a response to an office action dated September 25, 2003 for US Patent Application Serial Number 09/578,095. This is a formal communication intended for entry.

If you have any questions please contact me.

Thank you,

David Goldman



# EXHIBIT B

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# Fax



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|---|---|---|---|
| **To:** | Examiner Thangavelu | **From:** | David C. Goldman |
| | Group Art Unit 2123 | **Docket No.** | RD-27,376 |
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**Re:** US Patent Application Serial Number 09/578,095

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Aragones et al.

Serial No.: 09/578,095 Group Art Unit: 2123

Filed: May 25, 2000 Examiner: Thangavelu

Title: System And Method For Predicting Timing Of Future Service Of A Product Response to Paper No.: 3

AMENDMENT UNDER 37 CFR §1.111

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 2213-1450

Sir:

In response to the Office Action mailed on September 25, 2003, Applicant proposes the following amendment for the above-identified patent application:

Amendments to the claims are reflected in the listing of claims which begins on page 2 of this correspondence.

Remarks begin on page 15 of this correspondence.

Amendment To The Claims

Below is a listing of the claims that will replace all prior versions and listings of claims in the present patent application.

1. (Currently Amended) A system for predicting the timing of a future service event of a product formed from a plurality of compartments, comprising:

a database that contains a plurality of service information and a plurality of performance information for the product;

a statistical analyzer that analyzes the plurality of service information to determine a plurality of compartment failure information comprising compartment failure variables and compartment time-to-failure coefficients, wherein the statistical analyzer uses the plurality of compartment failure information to determine which compartment failure variables influence the timing of future service events and estimate time-to-failure distributions for the plurality of compartments;

a performance deterioration rate analyzer that analyzes performance deterioration rate of the product from the plurality of service information and performance information, wherein the performance deterioration rate analyzer comprises a statistical analysis script that relates a subset of compartments of the product according to time, wherein the statistical analysis script generates an estimated deterioration rate curve for the subset of compartments of the product, wherein the performance deterioration rate analyzer further comprises a transformer that transforms each estimated deterioration rate curve for a compartment to a performance life distribution; and

a simulator for simulating a distribution of future service events of the product according to the time-to-failure distributions and performance life distributions ~~plurality of compartment failure information and the performance deterioration rate analysis~~.

2. (Original) The system according to claim 1, wherein the database comprises a service database and a performance historical database.

3. (Original) The system according to claim 1, wherein the plurality of service information comprises compartment definitions, repair history and service factors.

4. (Original) The system according to claim 1, wherein the plurality of performance information comprises performance characteristic values, initial data levels after servicing, current data levels, dates at which the product is serviced, and variables that affect the servicing of a subset of the plurality of compartments.

5. (Original) The system according to claim 1, further comprising a preprocessor for processing the plurality of service information into a predetermined format.

6. (Currently Amended) The system according to claim 5 [[1]], wherein the preprocessor generates a plurality of data files according to the plurality of service information.

7. (Canceled)

8. (Canceled)

9. (Currently Amended) The system according to claim 1 [[8]], wherein the statistical analyzer uses the estimated time-to-failure distributions to determine a Weibull distribution for a subset of the plurality of compartments defined for the product.

10. (Original) The system according to claim 1, wherein the statistical analyzer comprises a service analysis script that executes a plurality of statistical procedures.

11. (Original) The system according to claim 10, wherein the plurality of statistical procedures comprise a multivariate regression and/or a correlation analysis.

12. (Original) The system according to claim 10, wherein the service analysis script generates a plurality of statistical diagnostic information.

13. (Original) The system according to claim 12, wherein the plurality of statistical diagnostic information comprises goodness-of-fit metrics and collinearity diagnostics.

14. (Original) The system according to claim 10, wherein the service analysis script generates a plurality of residual plots.

15. (Original) The system according to claim 1, wherein the statistical analyzer comprises a validation script.

16. (Original) The system according to claim 15, wherein the validation script is applied to a plurality of case studies set up for the product.

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Currently Amended) The system according to claim 1 [[19]], wherein the simulator uses the performance life distributions to determine a Weibull distribution for a subset of the plurality of compartments defined for the product.

21. (Original) The system according to claim 1, wherein the simulator forecasts a service plan for the future service events that comprises the time for scheduling the service events.

22. (Currently Amended) A system for predicting the timing of a future service event of a product formed from a plurality of compartments, comprising:

means for containing a plurality of service information and a plurality of performance information for the product;

means for analyzing the plurality of service information to determine a plurality of compartment failure information comprising compartment failure variables and compartment time-to-failure coefficients, wherein the analyzing means uses the plurality of compartment failure information to determine which compartment failure variables influence the timing of future service events and estimate time-to-failure distributions for the compartments;

means for performing a deterioration rate analysis that determines performance deterioration rate of the product from the plurality of service

information and performance information, wherein the performing means comprises a statistical analysis script that relates a subset of the plurality of compartments of the product according to time, wherein the statistical analysis script generates an estimated deterioration rate curve for a subset of the plurality of compartments of the product, wherein the performing means further comprises means for transforming each estimated deterioration rate curve for a compartment to a performance life distribution; and

means for simulating a distribution of future service events of the product according to the time-to-failure distributions and performance life distributions ~~plurality of compartment failure information and the performance deterioration rate analysis~~.

23. (Original) The system according to claim 22, wherein the plurality of service information comprises compartment definitions, repair history and service factors.

24. (Original) The system according to claim 22, wherein the plurality of performance information comprises performance characteristic values, initial data levels after servicing, current data levels, dates at which the product is serviced, and variables that affect the servicing of a subset of the plurality of compartments of the product.

25. (Original) The system according to claim 22, further comprising means for preprocessing the plurality of service information into a predetermined format.

26. (Original) The system according to claim 25, wherein the preprocessing means generates a plurality of data files according to the plurality of service information.

27. (Canceled)

28. (Canceled)

29. (Currently Amended) The system according to claim 22 [[28]], wherein the analyzing means uses the estimated time-to-failure distributions to determine a Weibull distribution for a subset of the plurality of compartments defined for the product.

30. (Original) The system according to claim 22, wherein the analyzing means comprises a service analysis script that executes a plurality of statistical procedures.

31. (Original) The system according to claim 30, wherein the plurality of statistical procedures comprise a multivariate regression and/or a correlation analysis.

32. (Currently Amended) The system according ~~systemaccording~~ to claim 30, wherein the service analysis script generates a plurality of statistical diagnostic information.

33. (Original) The system according to claim 32, wherein the plurality of statistical diagnostic information comprises goodness-of-fit metrics and collinearity diagnostics.

34. (Original) The system according to claim 30, wherein the service analysis script generates a plurality of residual plots.

35. (Original) The system according to claim 22, wherein the analyzing means comprises a validation script.

36. (Original) The system according to claim 35, wherein the validation script is applied to a plurality of case studies set up for the product.

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (Currently Amended) The system according to claim 22 [[39]], wherein the simulator uses the performance life distribution to determine a Weibull distribution for a subset of the plurality of compartments defined for the product.

41. (Original) The system according to claim 22, wherein the simulator forecasts a service plan for the future service events that comprises the time for scheduling the service events.

42. (Currently Amended) A method for predicting the timing of a future service event of a product formed from a plurality of compartments, comprising;

storing a plurality of service information and a plurality of performance information for the product;

analyzing the plurality of service information to determine a plurality of compartment failure information comprising compartment failure variables and

compartment time-to-failure coefficients, wherein the analyzing uses the plurality of compartment failure information to determine which compartment failure variables influence the timing of future service events and estimate time-to-failure distributions for the plurality of compartments;

performing a deterioration rate analysis of the product from the plurality of service information and performance information, wherein the performing comprises using a statistical analysis script that relates a subset of the plurality of compartments of the product according to time, wherein the statistical analysis script generates an estimated deterioration rate curve for a subset of the plurality of compartments of the product, wherein the performing a deterioration rate analysis further comprises transforming each estimated deterioration rate curve for a compartment to a performance life distribution; and

simulating a distribution of future service events of the product according to the time-to-failure distributions and performance life distributions ~~plurality of compartment failure information and the performance deterioration rate analysis~~.

43. (Original) The method according to claim 42, wherein the plurality of service information comprises compartment definitions, repair history and service factors.

44. (Original) The method according to claim 42, wherein the plurality of performance information comprises performance characteristic values, initial data levels after servicing, current data levels, dates at which the product is serviced, and variables that affect the servicing of a subset of the plurality of compartments of the product.

45. (Original) The method according to claim 42, further comprising preprocessing the plurality of service information into a predetermined format.

46. (Original) The method according to claim 45, wherein the preprocessing generates a plurality of data files according to the plurality of service information.

47. (Canceled)

48. (Canceled)

49. (Currently Amended) The method according to claim 42 [[48]], wherein the analyzing uses the estimated time-to-failure distributions to determine a Weibull distribution for a subset of the plurality of compartments.

50. (Original) The method according to claim 42, wherein the analyzing comprises using a service analysis script that executes a plurality of statistical procedures.

51. (Original) The method according to claim 50, wherein the plurality of statistical procedures comprise a multivariate regression and/or a correlation analysis.

52. (Original) The method according to claim 51, wherein the service analysis script generates a plurality of statistical diagnostic information.

53. (Original) The method according to claim 52, wherein the plurality of statistical diagnostic information comprises goodness-of-fit metrics and collinearity diagnostics.

54. (Original) The method according to claim 50, wherein the service analysis script generates a plurality of residual plots.

55. (Original) The method according to claim 42, wherein the analyzing comprises using a validation script.

56. (Original) The method according to claim 55, wherein the validation script is applied to a plurality of case studies set up for the product.

57. (Canceled)

58. (Canceled)

59. (Canceled)

60. (Currently Amended) The method according to claim 42 [[59]], wherein the simulating uses the performance life distributions to determine a Weibull distribution for a subset of the plurality of compartments.

61. (Original) The method according to claim 42, wherein the simulating forecasts a service plan for the future service events that comprises the time for scheduling the service events.

62. (Currently Amended) A computer-readable medium storing computer instructions for instructing a computer system to predict the timing of a future service event of a product formed from a plurality of compartments, the computer instructions comprising:

storing a plurality of service information and a plurality of performance information for the product;

analyzing the plurality of service information to determine a plurality of compartment failure information comprising compartment failure variables and compartment time-to-failure coefficients, wherein the analyzing instructions uses the plurality of compartment failure information to determine which compartment failure variables influence the timing of future service events and estimate time-to-failure distributions for the plurality of compartments;

performing a deterioration rate analysis of the product from the plurality of service information and performance information, wherein the performing instructions comprise a statistical analysis script that relates a subset of the plurality of compartments of the product according to time, wherein the statistical analysis script generates an estimated deterioration rate curve for a subset of the plurality of compartments of the product, wherein the performing instructions further comprise transforming instructions that transform each estimated deterioration rate curve to a performance life distribution; and

simulating a distribution of future service events of the product according to the time-to-failure distributions and performance life distributions ~~plurality of compartment failure information and the performance deterioration rate analysis~~.

63. (Original) The computer-readable medium according to claim 62, wherein the plurality of service information comprises compartment definitions, repair history and service factors.

64. (Original) The computer-readable medium according to claim 62, wherein the plurality of performance information comprises performance characteristic values, initial data levels after servicing, current data levels, dates at which the product is serviced, and variables that affect the servicing of a subset of the plurality of compartments of the product.

65. (Original) The computer-readable medium according to claim 62, further comprising preprocessing instructions that preprocess the plurality of service information into a predetermined format.

66. (Original) The computer-readable medium according to claim 65, wherein the preprocessing instructions generates a plurality of data files according to the plurality of service information.

67. (Canceled)

68. (Canceled)

69. (Currently Amended) The computer-readable medium according to claim 62 [[68]], wherein the analyzing instructions use the estimated time-to-failure distributions to determine a Weibull distribution for a subset of the plurality of compartments.

70. (Original) The computer-readable medium according to claim 62, wherein the analyzing instructions comprises instructions for using a service analysis script that executes a plurality of statistical procedures.

71. (Original) The computer-readable medium according to claim 70, wherein the plurality of statistical procedures comprise a multivariate regression and/or a correlation analysis.

72. (Original) The computer-readable medium according to claim 71, wherein the service analysis script generates a plurality of statistical diagnostic information.

73. (Original) The computer-readable medium according to claim 72, wherein the plurality of statistical diagnostic information comprises goodness-of-fit metrics and collinearity diagnostics.

74. (Original) The computer-readable medium according to claim 70, wherein the service analysis script generates a plurality of residual plots.

75. (Original) The computer-readable medium according to claim 62, wherein the analyzing instructions comprise using a validation script.

76. (Original) The computer-readable medium according to claim 75, wherein the validation script is applied to a plurality of case studies set up for the product.

77. (Canceled)

78. (Canceled)

79. (Canceled)

80. (Currently Amended) The computer-readable medium according to claim 62 [[79]], wherein the simulating instructions use the performance life distribution to determine a Weibull distribution for a subset of the plurality of compartments.

81. (Original) The computer-readable medium according to claim 62, wherein the simulating instructions forecasts a service plan for the future service events that comprises the time for scheduling the service events.

Remarks

Applicant carefully considered the Office Action mailed on September 25, 2003. Claims 1-81 are pending in the present patent application. Of the pending claims, the Examiner rejected claims 1-81. In response to the Office Action, Applicant canceled claims 7-8, 17-19; 27-28, 37-39; 47-48, 57-59; and 67-68, 77-79 and incorporated the subject matter therefrom into independent claims 1, 22, 42, and 62, respectively, to overcome the 35 USC §103 rejections. Also, Applicant added extra limitations to claims 1, 22, 42, and 62 to further distinguish over the prior art. In addition, Applicant amended claims 9, 20, 29, 40, 49, 60, 69 and 80 to maintain proper claim dependency. Also, Applicant amended claims 6 and 32 to correct minor inconsistencies. No new matter has been added. Applicant requests further examination and reconsideration of the present patent application.

The Examiner rejected claims 1-3, 5-8, 22, 23, 25-28, 42, 43, 45-48, 62, 63 and 65-68 under 35 USC §103(a) as being unpatentable over Kaminsky et al. ("A Monte Carlo Approach To Warranty Repair Predictions") in view of Cribbes ("Changes In Engine Maintenance Management") and further in view of Endrenyi et al.

Independent claims 1, 22, 42 and 62 now recite that the simulation of a distribution of future service events are based on estimated time-to-failure distributions and performance life distributions. The combination of Kaminsky et al. (hereinafter Kaminsky) in view of Cribbes and further in view of Endrenyi et al. (hereinafter Endrenyi) does not disclose or suggest performing a simulation based on estimated time-to-failure distributions and performance life distributions. Instead, the simulation performed by the combination of Kaminsky, Cribbes and Endrenyi is based on time-to-failure distributions. The combination of Kaminsky, Cribbes and Endrenyi does not provide a motivation suggesting the desirability of performing a simulation based on both time-to-failure distributions

and performance life distributions. Furthermore, Applicant submits that it would not have been obvious to one of ordinary skill in the art at the time of the invention to use performance life distributions in addition to time-to-failure distributions to simulate future service events in light of the teachings provided in Kaminsky, Cribbes and Endrenyi.

Since the combination of Kaminsky, Cribbes and Endrenyi does not disclose or suggest simulation of future service events based on estimated time-to-failure distributions and performance life distributions as set forth in claims 1, 22, 42 and 62, Applicant submits that these claims are patentably distinguishable over the combination. Therefore, Applicant requests that the Examiner reconsider and remove the §103(a) rejection of claims 1, 22, 42 and 62 under the combination of Kaminsky, Cribbes and Endrenyi.

Claims 2-3, 5-6; 23, 25-26; 43, 45-46; and 63, 65-66 depend directly or indirectly from now presumably allowable claims 1, 22, 42 and 62, respectively. Accordingly, Applicant requests that the Examiner reconsider and remove the §103(a) rejection of these claims.

Applicant notes that the Examiner submitted that the combination of Kaminsky in view of Cribbes and further in view of Endrenyi, Butler ("An Expert System Based Framework For An Incipient Failure Detection And Preventive Maintenance System") and Wang (US Patent Number 6,230,095) discloses the limitation of estimating deterioration rate curves for a subset of compartments of the product and transforming the deterioration rate curves to a performance life distribution. Applicant submits that the combination of Kaminsky in view of Cribbes and further in view of Endrenyi, Butler and Wang does not disclose or suggest estimating deterioration rate curves for a subset of compartments in a product and transforming the deterioration rate curves to a performance life distribution. The Examiner referenced the abstract, col. 2, lines 22-37 in Wang as being relevant to the limitation of estimating deterioration rate curves for a subset of compartments in a product. Applicant carefully reviewed these

sections in Wang and submits that they do not suggest estimating deterioration rate curves for a subset of compartments. Instead, Wang teaches that the rate and magnitude of deterioration of an engine is indicated by a trend parameter. An indication of deterioration through the use of a trend parameter is not analogous to estimating deterioration rate curves for a subset of compartments. With regard to transforming the deterioration rate curves to a performance life distribution, the Examiner referenced page 321, column 1, paragraph 5 to column 2, paragraph 1 in Butler as being relevant to this limitation. Applicant carefully reviewed this section in Butler and submits that it does not disclose or suggest transforming deterioration rate curves for a subset of compartments to a performance life distribution. Instead, Butler relates to detecting incipient failure on distribution systems or equipment. Butler provides no teaching or motivation suggesting the desirability of transforming deterioration rate curves to a performance life distribution.

In view of these distinctions, Applicant submits that the combination of Kaminsky in view of Cribbes and further in view of Endrenyi, Butler and Wang does not disclose or suggest estimating deterioration rate curves for a subset of compartments of the product and transforming the deterioration rate curves to a performance life distribution. In addition, Applicant submits that the combination of Kaminsky in view of Cribbes and further in view of Endrenyi, Butler and Wang does not suggest simulating a distribution of future service events based on estimated time-to-failure distributions and performance life distributions. Furthermore, Applicant submits that it would not have been obvious to one of ordinary skill in the art at the time of the invention to use performance life distributions in addition to time-to-failure distributions to simulate a distribution of future service events, in light of the teachings provided in the combination of Kaminsky in view of Cribbes and further in view of Endrenyi, Butler and Wang.

The Examiner rejected claims 4, 21, 24, 41, 44, 61, 64 and 81 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi and the Aerospace Technology article entitled

"Forecasting Engine Removals and Shop Visits" (hereinafter Aerospace Technology). The Examiner added the Aerospace Technology article for its disclosure of certain performance information. The Aerospace Technology article provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 4, 21; 24, 41; 44, 61; and 64, 81 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 9, 29, 49, and 69 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi and Woodman et al. (US Patent Number 6,195,624). The Examiner added Woodman et al. (hereinafter Woodman) for its disclosure of determining a Weibull distribution. Woodman provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 9, 29, 49, and 69 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 10, 30, 50, and 70 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi and Subramanyam (US Patent Number 5,701,471). The Examiner added Subramanyam for its disclosure of using certain statistical procedures. Subramanyam provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived

from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 10, 30, 50, and 70 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 11, 31, 51, and 71 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Subramanyam and Djaja et al. (US Patent Number 6,405,160). The Examiner added Djaja et al. (hereinafter Djaja) for its disclosure of using multivariate regression and/or correlation analysis. Djaja provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 11, 31, 51, and 71 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 12, 32, 52, and 72 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Subramanyam and Cave et al. (US Patent Number 5,740,233). The Examiner added Cave et al. (hereinafter Cave) for its disclosure of generating certain statistical diagnostic information. Cave provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 12, 32, 52, and 72 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 13, 33, 53, and 73 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Subramanyam, Cave, Stoughton et al. (US Patent Number 6,132,969) and Baleanu (US Patent Number 5,748,508). The Examiner added Stoughton et al. (hereinafter Stoughton) and Baleanu for their disclosure of generating goodness-of-fit metrics and collinearity diagnostics. Neither Stoughton nor Baleanu provide a teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 13, 33, 53, and 73 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 14, 34, 54, and 74 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Subramanyam and Meester et al. (US Patent Number 5,686,359). The Examiner added Meester et al. (hereinafter Meester) for its disclosure of generating residual plots. Meester provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 14, 34, 54, and 74 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 15-16, 35-36, 55-56, and 75-76 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi and Kozam et al. (US Patent Application Publication Number 2002/0035570). The Examiner added Kozam et al. (hereinafter Kozam)

for its disclosure of performing a validation. Kozam provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 15-16, 35-36, 55-56, and 75-76 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 17, 37, 57, and 77 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi and Butler. The Examiner added Butler for its disclosure of using a statistical analysis with a deterioration rate analysis. As mentioned above, Butler provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 17, 37, 57, and 77 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 18-19, 38-39, 58-59, and 78-79 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Butler and Wang. The Examiner added Wang for its disclosure of generating life performance distributions from deterioration rate curves. As mentioned above, Wang provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 18-19, 38-39, 58-59, and 78-79 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits

that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

The Examiner rejected claims 20, 40, 60, and 80 under 35 U.S.C. §103(a) as being unpatentable over Kaminsky in view of Cribbes and further in view of Endrenyi, Butler, Wang and Moosa et al. (US Patent Number 5,822,218). The Examiner added Moosa et al. (hereinafter Moosa) for its disclosure of using the life performance distributions to determine a Weibull distribution. Moosa provides no teaching or motivation that suggests the desirability of performing a simulation of a distribution of future service events based on estimated time-to-failure distributions and performance life distributions derived from deterioration rate curves as set forth in claims 1, 22, 42 and 62. Since claims 20, 40, 60, and 80 depend from presumably allowable claims 1, 22, 42 and 62, respectively, Applicant submits that these claims are allowable by dependency and requests that the Examiner reconsider and remove the §103(a) rejection.

In view of the foregoing remarks and amendments, Applicant requests that the Examiner reconsider this application and allow claims 1-6, 9-16, 20-26, 29-36, 40-46, 49-56, 60-66, 69-76 and 80-81.

If the Examiner has any questions regarding the present patent application, the Examiner can call Applicant's attorney, David Goldman, at telephone number (518)-387-5927 or (518)-387-5903.

Respectfully submitted,

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